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Attorney Reference Number 4641-55447
Application Number 09/659,211

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: NORIYUKI HIRAYANAGI

Art Unit: 2825

Application No. 09/659,211

Filed: September 11, 2000

For: ALIGNMENT-MARK DETECTION METHODS
AND DEVICES FOR CHARGED-PARTICLE-
BEAM MICROLITHOGRAPHY, AND
MICROELECTRONIC-DEVICE
MANUFACTURING METHODS COMPRISING
SAME

Examiner: Caridad Everhart

Date: June 19, 2002

COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service on June 19, 2002 as First Class Mail in an envelope addressed to: COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231.

Handwritten: Donald L. Stephens
Attorney for Applicant

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RESPONSE TO OFFICE ACTION

This paper is submitted in reply to the Office action dated December 20, 2001.

REMARKS

Reconsideration of the subject application is requested in view of the following remarks.

Claims 1-12 are pending. In this Response, all the pending claims are unchanged.

Claims 1-7 stand rejected for alleged anticipation by VanVucht. This rejection is traversed.

Independent claim 1 is directed, in the context of CPB microlithography of a specimen, to methods for detecting a position of an alignment mark on the specimen. In the method, a charged particle beam is irradiated onto an area of the specimen lacking an alignment mark, and backscattered charged particles propagating from the irradiated area are detected so as to obtain a first backscattered-particle signal. In another step the charged particle beam is irradiated onto the alignment mark, and backscattered charged particles propagating from the irradiated alignment mark are detected so as to obtain a second backscattered-particle signal. The first